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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,978	01/29/2002	Daniel Bubb	NC 82,974	6076

7590

12/01/2003

Code 1008.2, Naval Research Laboratory  
4555 Overlook Ave., S.W.  
Washington, DC 20375-5320

EXAMINER
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PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/059,778

Applicant(s)

Bubb et al

Examiner

M. L. Padgett

Group Art Unit

1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 5/20/02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-26 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-26 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some\* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

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1. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims required a choice of light, where the “wavelength” thereof “resonate with a vibrational mode of the starting material”, which was suppose to be determined by the “infrared absorption spectrum” of that material. Does this mean that the light is required to be in the IR range? Is it a direct determination, so to speak, or can the light be of any wavelength, but some how related by some unspecified correspondence? How does one or can one, determine the vibrational mode characteristics of a light that is not measured? Clarification on the record is desirable.

The Markush group of claims 2 and 13 is improper, since both polymeric and biological material are subsets of organic material, thus the species are not mutually exclusive.

Since claim 3 is any material or combination of materials in existence, how is it intended to further limit claim 1?

In claims 5 and 15, “microns” is a unit, not a value. So does this read on any thickness, as long as it is written in units of “ $\mu\text{m}$ ”? Or is some other unspecified range intended? Also see claims 25 and 23.

How (claims 10 and 20) does one subject the same target to all 3 of the claimed pressure environments at the same time, or is some other meaning intended?

Claim 21, line 2 appears to be missing a coma.

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the

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claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13 depends from 11, which depends from 9, which depends from 7, which depends from 5, which in turn is dependent on claim 2, which is identical (except for dependence) to claim 13.

Claim 25, line 2 "up tp 10 KHz" would appear to contain a typographical error, and "macrosec" does not even designate to any known unit for time, it is entirely relative, lacking any clear metes and bounds.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donley et al, (5,002,798) in view of Blanchet-Fincher (5,192,580) or visa versa.

Both Donley et al and Blanchet-Fincher teach pulsed laser ablation processes to transfer material from a target source to a deposition on a substrate, but use Nd:YAG lasers, although

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they appear to be using different harmonics of the lasers, i.e. different wavelengths, to achieve ablation, etc. Both teach spectroscopically measuring characteristics of the material they are treating, but neither state that they use such spectral results to determine the wavelength to be employed in the lasers transfer (i.e. ablation) process, however in both cases they are employing lasers that use light that is absorbed by their source material, to cause it to ablate. How they discovered which wavelength were appropriate is not given, however, if looking up such values is not an option, it would have been obvious to one of ordinary skill in the art to measure the absorption of the material to determine the optimal absorption wavelength to be employed for the lasers available, as it is the standard and practical way to determine required values, hence obvious. The spectral results given in either case for material being treated would have suggested absorption techniques available to determine useful wavelengths. Particularly note Donley teaches inorganic PLD, and Nd:YAG laser at  $\lambda = 0.53 \mu\text{m}$  and a pulse width of 15ns (see abstract; figures; Col. 3, lines 40-61). Blanchet-Fincher ablates and deposits polymers with a Nd:YAG and other pulsed lasers, noting the 4<sup>th</sup> harmonic at 266nm for the Nd:YAG laser; pulses of 6-7 nanoseconds, and IR spectra of abated material. A material that can be so characterized must absorb IR, hence use of IR in PL depositions would have been suggested, especially as the IR laser is known for such procedures as demonstrates by Donley with a Nd:YAG laser.

Parameters would have been expected to be optimized for individual materials, and most of applicant's dependent claim ranges cover the gamut of all possible options.

4. Other art of interest for laser ablation techniques, and parameters include Haight et al, Mclean II, et al and Neev.

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5. Any inquiry concerning this communication should be directed to M L. Padgett at telephone number (703) 308-2336 or after mid December (9<sup>th</sup> or 10<sup>th</sup>) at (571) 272-1425, on M-F from about 8:30 am – 4:30 pm; and fax # (703) 872-9306.

M. Padgett/lap

November 17, 2003

Corrected November 25, 2003

Corrected November 26, 2003



**MARIANNE PADGETT  
PRIMARY EXAMINER**